

# ALBANIA, BOSNIA AND HERZEGOVINA, CROATIA, MACEDONIA, SERBIA AND MONTENEGRO, AND SLOVENIA

By Walter G. Steblez

Europe's Adriatic Balkan region is part of the southern portion of the Mediterranean Alpine folded zone, which extends through the Dinarides of former Yugoslavia (Bosnia and Herzegovina, Croatia, Macedonia, Serbia and Montenegro, and Slovenia), the Albanides of Albania, and the Hellenides of Greece. Mining for base and precious metals may be traced through historical records to at least the 5th century B.C. Copper mining at Serbia's Bor deposit may have had prehistoric beginnings.

By the early 1930s and until 2000, mineral deposits in the region were well-defined. Commercial resources of major base metals included those of aluminum, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, and zinc. Such precious metals as gold, silver, palladium, and platinum were found mainly in association with such base metals as copper, lead, and zinc. Industrial minerals are represented by a broad range of carbonate and silicate rocks, gravels, and sands as well as by clays and volcanic materials. Mineral fuels comprised coal (lignite), natural gas, and petroleum.

Until the early 1990s, the mining, processing, and downstream exploitation of base metals established the region as a major European source of copper, lead, and zinc and a major world producer of chromite. The transition of the region from central economic planning to market economy systems between 1991 and 2001 also began a swift deconstruction of existing political and social structures. The ensuing political, social, and ethnic tensions and conflict destroyed or degraded much of the region's mineral industries and industrial infrastructure. In 2001, social and political tensions in the region centered in the Province of Kosovo in Serbia and Montenegro and in Macedonia.

The future status of the minerals industries in the countries of the Adriatic Balkan region would be clarified following political settlement and normalization not only among the states in the region, but also within such countries as Bosnia and Herzegovina, Croatia, Macedonia, and Serbia and Montenegro.

## ALBANIA

In 2001, Albania's economy in terms of the gross domestic product (GDP) grew by 6.5% compared with that of 2000; this growth, however, was fueled in large measure by transfers from abroad (more than 25% of GDP) in the form of donations, remittances, and some inflow of international capital. Although

industrial production registered a growth of 5% and represented about 11.5% of the GDP, the country's minerals industry continued to undergo major production shortfalls (International Monetary Fund, 2002, p. 3; Treichel, 2002, p. 2-9). Mineral deposits that traditionally have been associated with Albania include those of chromite, copper ore, and nickeliferous iron ore as well as those of natural gas and petroleum. In 2001, of the metal-bearing deposits, only those of chromite were under exploitation, although the production of marketable chromite (concentrate and direct shipping ore) declined by about 30% compared with that of 2000, and the output of ferrochromium declined by about 4.8%. Such industrial minerals as dolomite, gypsum and marble, and phosphate rock have been worked only intermittently during the past several years. Albania's production of coal, natural gas, and petroleum also declined by about 20%, 4%, and 2%, respectively (table 1). The level of foreign investment in Albania's minerals sector had not changed appreciably since 2000. The ferrochromium plant at Elbasan was under the operational management of Italian ferrochromium producer Darfo S.p.A. The Turkish copper smelting concern Ber-Ober Madencilik San ve Tic As, which in 2000 was granted a 30-year concession to operate Albania's copper industry (mines and processing facilities in the Lezhe, Midrite, and Puke Districts), continued its work, although copper production during the year was not reported (European Bank for Reconstruction and Development, 2001, p. 17; Kocibelli, 2002).

Albania's energy production was based on coal, hydropower, natural gas, and petroleum. The downturn of production of the mineral fuels coupled with drought, which reduced electric power generation, has placed the country's future developmental plans in doubt. Given Albania's recent history (1980s) as a net exporter of energy, the latest available data (2000) show exports of mineral fuels as a percentage of total exports to have declined steadily to 1.9% from 3.4% in 1997. Imports of mineral fuels constituted about 9% of total imports, whereas they were 1.8% in 1997 (International Monetary Fund, 2001, p. 48-49). A proposed investment in Albania's Patos Marinze oilfield by the International Finance Corporation (IFC) and other foreign investors aimed to modernize the country's petroleum extraction sector. The project, which was originally approved in 1998, was put on hold owing to a slump in oil prices in 1998 and 1999 but was reaffirmed in 2001. Successful implementation of this program would boost production to 23,000 barrels per day (bbl/d) from 7,000 bbl/d. The IFC would

have a 15% interest in the project with a 26.1% contribution to the total cost (\$197.5 million). The IFC projected that petroleum production at Patos Marinze would reach 10.8 million barrels (Mbbl) in 2003 from about 3.5 Mbbl (International Finance Corporation, 2001). The country reported that recoverable reserves of petroleum amounted to about 550 million metric tons (Mt).

## References Cited

- European Bank for Reconstruction and Development, 2001, Albania—Investment profile: London, United Kingdom, European Bank for Reconstruction and Development, March, 32 p.
- International Finance Corporation, 2001, Albania—Proposed investment in Patos Marinza: Washington, DC, International Finance Corporation IFC/R2001 0041, March 21, 10 p.
- International Monetary Fund, 2001, Albania—Selected issues and statistical appendix: Washington, DC, International Monetary Fund Country Report No. 01/118, July, 54 p.
- International Monetary Fund, 2002, Albania—Request for a three-year arrangement under the poverty reduction and growth facility—Staff report: Washington, DC, International Monetary Fund Country Report No. 02/135, July, 75 p.
- Kocibelli, Rushan, 2002, Albania, *in* Mining annual review: London, United Kingdom, Mining Journal Ltd. CD ROM.
- Treichel, Volker, 2002, Stabilization and structural reforms in Albania since 1977—Achievements and remaining challenges: Washington, DC, International Monetary Fund, February, 27 p.

## BOSNIA AND HERZEGOVINA

The Federation of Bosnian Moslems and Croats (FBC) and Republika Srpska (RS), which formed Bosnia and Herzegovina, continued to function as semiautonomous economic and political entities. The FBC administered about 51% of Bosnia and Herzegovina's territory; the balance of the territory was administered by RS. In 2001, major progress to integrate the FBC and RS entities was not evident. This lack of progress continued to be reflected by a less-than-clear economic picture that resulted from disparate reporting by each side to the Agency for Statistics in Sarajevo (U.S. Central Intelligence Agency, 2002).

Foreign financial assistance and transfers from abroad continued to be among the mainstays of economic growth. The growth rate of the GDP in 2000 was about 5.8% compared with that of 1999; a growth rate of about 5.6% was anticipated for 2001. Industrial output constituted about 26% of Bosnia and Herzegovina's GDP. The contribution to the GDP by the mining and quarrying and processing sectors of the FBC and RS amounted to about 2.8% and 1.3%, respectively (World Bank Group, 2002, p. 1, 22, 40). The overall contribution of the private sector to Bosnia and Herzegovina's GDP was low (about 35%). Private ownership in the mining and quarrying and mineral-processing spheres in the FBC and RS was less than 1% of total privatized enterprises in the country. To correct this imbalance, the Governments of the FBC and RS agreed to accelerate the denationalization process of large-scale industrial enterprises and utilities with financial assistance from such international institutions as the European Union (EU), the World Bank, and the U.S. Agency for International Development (World Bank Group, 2001). These and other organizations formed the International Advisory Group on Privatization, which supported a plan to privatize 86 enterprises

in the FBC and 52 in RS. Enterprises for metal processing, machine building, and construction materials manufacturing were among the proposed groups. The FBC's major steel producer BH Steel-Zeljezara in Zenica also was included in this plan.

In 2001, the major developments in Bosnia and Herzegovina's minerals industry took place mainly in the FBC. Aluminium (Mostar) bauxite and alumina (in the southern and western FBC), and coal (Tuzla and Zenica regions) were the leading minerals produced in the FBC. Lead and zinc ore has been produced at Olovo and Vares, but the mining status at these operations in 2001 remained uncertain. Iron ore production was centered at Jablanica and Vares, and manganese ore, at Bosanska Krupa.

The FBC also has exploitable resources of barite, gypsum, magnesite, and rock salt. In 2001, the levels of output of these and other minerals commodities, however, were not adequately reported.

BH Steel announced plans for facility expansion in 2001. A contract was awarded to Danieli SpA of Italy to supply the steel mill with a new 100-metric-ton (t) electric arc furnace (EAF), a ladle furnace, and a five-strand high-speed billet caster [940,000 metric tons per year (t/yr)]. The new facility would produce basic and high-quality steels in the range of 130 to 180 millimeters. BH Steel became a major recipient of foreign investment in 1999 when the Government of Kuwait purchased 50% of the enterprise's shares of stock (Kohl 2001; Metal Bulletin, 2001b).

A major development in the country's nonferrous metals sector involved the modernization of FBC's aluminum producer Aluminij d.d. Mostar. The modernization program, which was valued at about \$63 million and whose completion reportedly was scheduled for the third quarter of 2002, was to be carried out under the auspices of such EU companies as VAW Aluminium Technologie GmbH, Daimler-Chrysler, and Proceadair Pollution Control. The modernization program was to include conversion of the 256-pot smelter to a center-worked pot system from side-worked Pechiney units, which had been installed in the early 1980s (Metal Bulletin, 2001a). The modernization program reportedly would protect the existing workforce and add additional jobs at the Mostar aluminum plant.

Another important development involved the continuing privatization of the FBC's cement industry. In 2001, D.D. Fabrika Cementa Lukavac became fully privatized through the sale of Government assets worth about 77% of total stock value. The Government's offer included the sale of about 67% of its shares through international tender; the balance, through the public sale of stock. In October, Alas International Baustoffproduktion AG of Austria obtained 51% of Lukavac's stock for \$15.7 million. Lukavac, which had a production capacity (dry process) of 340,000 t/yr of cement, would continue to obtain all its limestone feedstock (up to 250,000 t/yr) from a nearby Government-owned limestone quarry. As part of the agreement, Alas International planned to invest about \$52 million in the course of a 3-year period and would maintain the existing level of employment. Other bidders included Heidelberger Zement of Germany, which had acquired the country's other cement producer Tvornica cementa Kakanj in 2000 (Dani, 2001; Novac, 2001).

RS was known to mine coal and lignite and metal ores that included bauxite (aluminum), iron, and lead and zinc. Industrial mineral production included asbestos, ceramic and refractory clays, gypsum, limestone, magnesite, marble, and silica.

## References Cited

- Dani, 2001, Njemacko vrijeme i kaknjso strpljeje (Little time and Kakajn patience): Dani, no. 188, January, p. 1-4.
- Kohl, Christian, 2001, Danieli to build in Bosnia-Herzegovina: American Metal Market, April 5, p. 1.
- Metal Bulletin, 2001a, Alluminij d.d. Mostar begins smelter modernization with upgraded pots: Metal Bulletin, no. 8621, November 1, p. 6.
- Metal Bulletin, 2001b, Bosnia's BH orders new billet plant: Metal Bulletin, no. 8565, April 9, p. 17.
- Novac, 2001, [untitled]: Sarajevo, Bosnia and Herzegovina, Novac, July 23, p. 1.
- U.S. Central Intelligence Agency, 2002, Bosnia and Herzegovina, *in* World factbook 2001: Washington, DC, U.S. Central Intelligence Agency, p. 69.
- World Bank Group, 2001, Project Appraisal Document on a proposed credit on the amount of SDR 15.6 (US\$19.6 million equivalent) to Bosnia and Herzegovina for a privatization and technical assistance project: World Bank Group Report No. 22156-BiH, May 31, 89 p.
- World Bank Group, 2002, Report and recommendation of the president of the International Development Association to the executive directors on a proposed business environment adjustment credit in the amount of SDR 35.3 million (US\$44.0 million equivalent) to Bosnia and Herzegovina: World Bank Group Report No. P 7530 BIH, April 24, 49 p.

## CROATIA

Croatia continued to produce minor quantities of metals and industrial minerals, mainly for domestic consumption. Petroleum extraction and refining were the major sectors of Croatia's minerals industry.

In 2001, the value of Croatia's total industrial production rose by 6% compared with that of 2000. The value of output of the mining and quarrying sector, as a whole, rose by about 2%. The petroleum and natural gas sector (less surveying), however, fell short of the 2000 level of output by about 3%. The gross value of output of coke and petroleum refinery products also declined (5%) compared with that of 2000 (CROSTAT, 2002). Actual production in this sector showed mixed results as natural gas output increased by 14% and that of petroleum declined by about 8%.

The gross value of output of the country's mining and quarrying operations, other than those associated with hydrocarbons, increased by about 11.3%, and that of processed industrial minerals, by 6.5% compared with that of 2000. The production, by weight, of such building materials as lime and cement increased by about 15% and 14%, respectively (CROSTAT, 2002).

The value of base-metals production increased by about 4.2%. In terms of units of physical output, the production levels of aluminum semimanufactures and ingot (primary and secondary) rose by 13% and 6%, respectively, compared with those of 2000. The production of crude steel (about 58,000 t) declined considerably (18%). In 2001, efforts to privatize the steel industry focused on *Zeljezara Sisak d.d.*, which was located southwest of Zagreb. Prospective buyers included Russian, Slovak, and Swiss steel pipe producers and traders. The pace of privatization, however, was uncertain owing to *Sisak's* financial problems that arose during the period of civil

strife in former Yugoslavia. Following bankruptcy, *Sisak* (mainly a producer of welded and seamless pipe) went into receivership that required court approval prior to privatization. Most of *Sisak's* shares were held by the power utility and several other Government agencies. In 2001, *Sisak's* production reportedly ranged from 5,000 to 7,000 metric tons per month, or about one-third of capacity (Metal Bulletin, 2001).

Croatia's other principal steel producer *Jadranska Zeljezara Split* was located in Split on the coast of the Adriatic Sea. In 2001, *Jadranska* reported nearing the completion of a \$US9.7 million investment program, which required the closure of the operations in August. Operations were scheduled to restart in early 2002 and were to include a new EAF (about 82,000 t/yr), a modernized billet casting unit (80,000 t/yr), and a bar mill (76,000 t/yr). A program of facility expansion and full modernization of steel capacity at *Jadranska* was undertaken by *Voest-Alpine Industrieanlagenbau* of Austria (Metal Bulletin, 2001).

Almost all categories of industrial minerals showed growth in 2001 compared with output levels of 2000. The primary activity in this sector involved conversion from fuel oil to coal as a fuel source at the *Dalmacija* cement and *Nasice* cement D.D. cement plants (World Cement, 2001).

Croatia's state-owned oil company *Industrija Nafta d.d. Zagreb (INA)* continued to operate domestic gasfields and oilfields southeast of Zagreb near the Hungarian border and along the Adriatic coast. Imports, however, which were conveyed via the *Adria* pipeline, remained Croatia's chief source of petroleum. In early 2001, offshore oil and gas exploration yielded results in the northern Adriatic Sea with the discovery of a natural gas deposit at the *Marcia 1* well. A total of four wells were drilled in that area (Oil & Gas Journal, 2001). The privatization of the oil and gas industry was a subject of study and recommendations by several international banking and consulting organizations; these recommendations included initial public stock offerings and strategic partnerships. The Government initially planned to restructure this sector into separate petroleum and natural gas commercial entities (Oil & Gas Journal, 2000; Seperic and Zivkovic, 2000).

In late 2001, a final protocol was signed by the Croatian and Russian Governments to initiate exports of Russia's Siberian petroleum through the *Druzhba-Adria* pipeline. The delivery of petroleum by the *Druzhba-Adria* route would allow Russian oil deliveries to bypass the Bosphorus and Dardanelles Straits by transiting from Russia through Belarus, Ukraine, Slovakia, and Hungary; the pipeline's final outlet will be the Croatian port of *Omisalj*. Reportedly, severe restrictions on oil tanker tonnage that passes through the Bosphorus and the Dardanelles was imposed by Turkey (Alexander's Gas & Oil Connections, 2002).

## References Cited

- Alexander's Gas & Oil Connections, 2002, Russia and Croatia sign protocol on *Druzhba-Adria* project: Alexander's Gas and Oil Connections, v. 7, no. 1 January 9, p. 1.
- CROSTAT, 2002, Industry 2001 and 2002 production: CROSTAT, January 15, no. 2.1.1/2, 6 p.
- Metal Bulletin, 2001, Croatia plans to privatise bankrupt tubemaker *Sisak*: Metal Bulletin, no. 8614, October 8, p. 17.

Oil & Gas Journal, 2000, A report outlining Croatia's options for privatizing state-owned oil and gas company Industrija Nafta (INA): Oil & Gas Journal, v. 99, no. 27, July 2, p. 7.  
 Oil & Gas Journal, 2001, Eastern Europe action: Oil & Gas Journal, v. 99, no. 16, April 16, p. 37.  
 Seperic, Renata and Zivkovic, Goran, 2000, Croatia—Country report: Zagreb, Croatia, Ministry of the Economy of Croatia, November, p. 8.  
 World Cement, 2001, Croatia: World Cement, v. 32, no. 7, July, p. 75.

## MACEDONIA

The Former Yugoslav Republic of Macedonia is well-endowed with mineral deposits necessary for the production of copper, iron, lead, precious metals, and zinc. A processing and fabricating infrastructure also was established that allowed the production of not only these metals and their alloys, but also such ferroalloys as ferrochromium, ferromanganese, and ferronickel. Also, such industrial minerals as bentonite, feldspar, gypsum, sand and gravel, and stone (carbonate and silicate) as well as cement and other construction materials that are based on quarried products were produced mainly for export. The strong economic recovery of Macedonia that began in 2000 ended in 2001 as the country experienced increased ethnic tensions and conflicts, which partly were the outcome of the conflict in recent years in neighboring Serbia's Kosovo Province.

In 2001, the country's GDP contracted by about 4% compared with that of 2000; industrial production fell by 8% (U.S. Central Intelligence Agency, 2002). The available volume output indices for 2002, which were published by the State Statistical Office of Macedonia, showed that the total output of mining and quarrying had declined by about 1.8% compared with the 2000 output level (Drzhaven Zavod za Statistika, 2002). Individual subcategories of mining and quarrying, however, showed that levels of mine output of lignite and metal ores remained at the same levels as those achieved in 2000, although mine production of industrial minerals showed a decline of about 5.5%. With respect to minerals processing, base metals, the production of coke and refined petroleum, and manufactured industrial minerals showed shortfalls of about 5.6%, 5.2%, and 1.0%, respectively.

Although mineral industry issues and events in 2001 were limited in scope, they included continuing interest in the Bucim copper-gold open pit mine in the southern part of the country, which was privatized in 2000. Having conducted an audit of the mine in early 2001, CSMA Consultants Ltd. was hired to provide technical assistance to make the operation profitable (CSMA Consultants Ltd., 2002). In the steel sector, AD Makstil (a subsidiary of Duferco International Investment Holding Ltd.) reported that modernization of the steel shop and caster and the plate mill were nearing completion in 2001. Also, because of a favorable European plate market, Makstil reported overall good financial results at yearend (Duferco S.A., 2002).

The plan to build the Thessaloniki-Skopje crude petroleum pipeline, which won the approval of the European Bank for Reconstruction and Development to obtain a \$50 million finance loan in December 2000, was finally adopted in January 2001. When completed, the pipeline would carry about 2.5 million metric tons per year of petroleum from the Greek port of

Thessaloniki to the pipeline's terminus at the OKTA refinery in Skopje (European Bank for Reconstruction and Development, 2001, p. 2).

## References Cited

CSMA Consultants Ltd., 2001, Bucim copper-Macedonia-project ongoing: Trevenson, United Kingdom, CSMA Consultants Ltd. press release, July, 1 p.  
 Drzhaven Zavod za Statistika, 2002, Monthly indices of production volume: Drzhaven Zavod za Statistika No. 6.1.2.18, March 25, p. 2-3.  
 Duferco S.A., 2002, Annual report for 2001: Lugano, Switzerland, Duferco S.A., 4 p.  
 European Bank for Reconstruction and Development, 2001, Projects signed in 2001: European Bank for Reconstruction and Development, December 31, 6 p.  
 U.S. Central Intelligence Agency, 2002, Macedonia, in World factbook 2001: Washington, DC, U.S. Central Intelligence Agency, p. 325-326.

## SERBIA AND MONTENEGRO

In 2001, Serbia and Montenegro's postwar economy continued to recover as the GDP was officially reported to have increased by 6.2% compared with that of the preceding year. Despite overall economic improvement, however, the total volume of industrial production remained at about the level of output of 2000, and the output of the mining and quarrying component contracted by 13%. The mine output of oil and gas and coal declined by 18% and 8%, respectively; the production of metals and industrial minerals declined by 29% and 7%, respectively (Federal Statistical Office of Yugoslavia, 2002a, b). Owing to unresolved political and social issues in the Province of Kosovo, Serbia and Montenegro excluded official data about Kosovo's economy and minerals industry from official reports since 1999. Although the future of Kosovo's political status remains uncertain, its mineral wealth is not. Kosovo encompasses substantial portions of Serbia and Montenegro's kaolin, lignite, lead and zinc, nickel, and magnesium deposits. Other deposits with prospective commercial value include bauxite, chromite, limestone, marble, and quartz (Vukovic and Weinstein, 2002). With respect to RMHK Trepca, which was the lead and zinc mining and smelting complex in Kosovo, the United Nations Interim Administration Mission in Kosovo continued to work on environmental cleanup at the site and preparation for Trepca's eventual operation (Cundy, 2002). Trepca ceased operations during the Kosovo crisis in 1999 owing to war damage and ownership disputes.

In contrast to the output of most metals during the year, aluminum and alumina production registered gains of 14% and 9%, respectively, compared with 2000 production levels. Exports of primary aluminum and aluminum alloys amounted to 95,794 t, which was an increase of about 6%. In 2000, Kombinat Aluminijuma Podgorica (KAP) in Montenegro, which was the country's sole producer of primary aluminum, undertook a rationalization program that was instrumental in increasing output at the facility in 2001. KAP management and the Government of Montenegro reported plans to modernize the plant further in preparation for privatization (World Bank Group, 2002).

In 2001, mine production of copper declined by about 45%, and the output of primary refined copper, by about 29% compared with 2000 production levels. Exports of copper,

however, appear to have risen in 2001 by about 13% to 73,881 t (all forms). The year was marked by continuing financial difficulties at Bor that stemmed, in part, from damage sustained at several facilities during the Kosovo crisis of 1999 as well as by mineworker strikes over late wages. Apart from copper production from domestic sources, Bor also has been toll smelting copper concentrates for foreign producers in Greece and several other Balkan countries. General imports of copper concentrates in 2001 declined to 50,000 t from 68,000 t in 2000. Mytilineos SA of Greece was one of Bor's toll smelting contractors that expressed an interest in acquiring Bor's smelting and refining capacities in the course of the company's privatization (Metal Bulletin, 2001; Federal Statistical Office of Yugoslavia, 2002a).

Lead and zinc ore production declined by 29%. Smelter and refinery production of lead appeared to be virtually moribund because no output was reported for either category in 2001. Refined zinc, however, was one of the few instances of an increase in metal production; it rose to 13,467 t from 8,291 t in 2000 and appeared to be nearing the most recent high output level in 1998. Other production shortfalls among metals were noted for silver (37%), magnesium (34%), and such ferrous metals as pig iron (18%), crude steel (12%), and steel semimanufactures (9%) (table 1).

A similar situation prevailed with respect to the output of industrial minerals and mineral fuels. Cement, however, was a major exception with output having risen by about 14% compared with that of 2000. A salient event in the industrial minerals sector was an announcement in late 2001 by Erin Ventures Inc. of British Columbia, Canada, that it would proceed with the development of the Piskanja borate deposit and study the entire Jadranol Basin (host to the Podrjaski borate deposit) pending final approval by Serbian Government authorities and finalization of discussions with an international chemical company to form a joint-venture partnership. The Government's studies undertaken in the late 1980s revealed that the Piskanja deposit had borate resources that amounted to at least 7 Mt, at a grade of 39.39% boron oxide (Erin Ventures Inc., 2001, 2002).

The production of all fossil fuels declined—coal by 5%, natural gas by 31%, and petroleum by 7%—compared with 2000 production levels. To overcome these shortfalls, official trade data for 2001 registered significant increases in the import of natural gas and petroleum. Petroleum imports rose to more than 1.8 Mt from 158,000 t in 2000; natural gas output increased to 847,000 t from 485,000 t. A significant development during the year involved the planned drilling for oil by Ramco Energy in a region of Macedonia believed to have commercially significant deposits of petroleum and natural gas (Alexander's Gas & Oil Connections, 2001).

## References Cited

- Alexander's Gas & Oil Connections, 2001, Ramco Energy plans to drill first well in Montenegro: Alexander's Gas & Oil Connections, v. 6, no. 13, July 17, 1 p.  
Cundy, Chris, 2001, Ownership dispute stalls Trepcia recovery: Metal Bulletin, no. 8603, August 30, p. 7.  
Erin Ventures Inc., 2001, Piskanja boron property update: Victoria, British Columbia, Canada, Erin Ventures Inc. press release, October 9, 1 p.  
Erin Ventures Inc., 2002, Yugoslavian boron project update: Victoria, British Columbia, Canada, Erin Ventures Inc. press release, June 25, 1 p.

Federal Statistical Office of Yugoslavia, 2002a, INDEX—Monthly review of statistics: Belgrade, Serbia and Montenegro, Federal Statistical Office of Yugoslavia, no. 4, p. 5.

Federal Statistical Office of Yugoslavia, 2002b, Summary report—Basic data on socio-economic trends: Belgrade, Serbia and Montenegro, Federal Statistical Office of Yugoslavia, no. 33, July 2, p. 6, 13, 40.

Metal Bulletin, 2001, RTB Bor workers return to work after strike is resolved: Metal Bulletin, no. 8601, August 20, p. 5.

Vukovic, Milovan, and Weinstein, Ari, 2002, Kosovo mining metallurgy, and politics—Eight centuries of perspective: JOM, v. 54, no. 5, May, p. 21-24.

World Bank Group, 2002, Proposed structural adjustment credit—Republic of Montenegro: World Bank Group Report no. 7645-YU, July 10, p. 16.

## SLOVENIA

Slovenia's GDP grew by about 3% in 2001 compared with that of 2000, and total output of industry, by about 2.9% (Statistichni Urad Republike Slovenije [Statistical Directorate of the Republic of Slovenia], 2002, p. 60). The country's positive economic performance over several years to a large extent mirrored a political and social environment that was more stable than that of the rest of the republics that formed former Yugoslavia. Slovenia's industries and infrastructure also compared more favorably with those of the EU member countries than with those of its former Yugoslav partners.

Within the context of global and regional mineral production levels, Slovenia's modest minerals output included coal, natural gas, petroleum, and a variety of industrial minerals. Mineral raw materials required by the country's industries were met mainly through imports. Preliminary trade returns for 2001 show Slovenia's net import reliance (in value) on crude and refined petroleum (almost 100%), iron and steel (65%), and nonferrous metals (6.5%) (Statistichni Urad Republike Slovenije [Statistical Directorate of the Republic of Slovenia], 2002, p. 60).

In 2001, mining and quarrying as a percentage of GDP was reported to be 0.9%, which was a decline of more than 7% compared with that of 2000. The total volume of mine production showed a decline of about 8%. The output of basic metals and semimanufactures, however, showed a gain of about 6.7%. The year's mining results in the mineral fuels branch registered declines in natural gas, lignite, and brown coal production of about 10%, 8%, and 7%, respectively. Although a rise in production was indicated for crude petroleum, the actual output of this commodity was negligible (Statistichni Urad Republike Slovenije [Statistical Directorate of the Republic of Slovenia], 2002, p. 60, 61). The contraction of mining and quarrying output correlated with the decline of 8.3%, 15.5%, 5.3%, and 2.6% in 2001, 2000, 1999, and 1998, respectively, in the sector's labor force. Employment increases, however, were recorded mainly in the service sectors of Slovenia's economy (Bednas, 2000, p. 142-143).

Slovenia's metallurgical sector largely consisted of primary aluminum production at Kidričevo (Talum d.o.o.) and three steel mills. The state-owned holding company Slovenske Železarne (SŽ) maintained ownership of SŽ Acroni Jesenice d.o.o. (Acroni) and SŽ Metal Ravne d.o.o. (Metal Ravne). In 2001, SŽ reported seeking foreign investors, preferably joint-venture arrangements, in its Acroni and Metal Ravne operations (Barrett, 2001, p. 19).

Acroni's total steelmaking capacity amounted to about 490,000 t/yr of which less than one-half has been utilized in

recent years. An investment program to modernize Acroni from 2000 through 2004 (\$52 million) was set to raise the plant's stainless production to 100,000 t/yr from 50,000 t/yr. The modernization of plant's process control system and the reheat furnace also was scheduled. Another major component of Acroni's investment program addressed the improvement of environmental aspects of steelmaking, which included dust abatement at EAF operations, the upgrading the water treatment system, and dust removal and slag handling and processing (Barrett, 2001, p. 18). In addition to stainless steel, Acroni also produced alloy and carbon steels. Most of the planned investment at Metal Ravne for 2001 (about \$4.5 million) was to go for the modernization of the plant's medium section mill. Metal Ravne produced about 150,000 t/y of carbon alloy and stainless steels.

Investment plans for 2001 (about \$2.7 million) at Inexa Štore (formerly Jekla Štore; a subsidiary of the Inexa Group of

Sweden since 1999) called for the modernization of the EAF and continuous caster; also, the construction of the smelter's dust-abatement technology was to begin in 2001 and be fully installed by 2003. Inexa Štore had a 145,000-t/y capacity to produce engineering, forging, and spring steels (Barrett, 2001).

### References Cited

- Barrett, Richard, 2001, Set for sale, *in* Europe/CIS supplement: Metal Bulletin Monthly, no. 366, June, p. 18-19.
- Bednas, Maja, Spring report 2000—Economic development in 2001 and analytical explication of spring economic forecast for 2002 and 2003: Ljubljana, Slovenia, Institute of Macroeconomic Analysis and Development, 168 p.
- Statistichi Urad Republike Slovenije [Statistical Directorate of the Republic of Slovenia], 2002, Slovenia v stevilah [Slovenia in figures]: Ljubljana, Slovenia, Statistichi Urad Republike Slovenije, 64 p.

TABLE 1  
ALBANIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/ METALS	1997	1998	1999	2000	2001
Bauxite	4,454	4,128	4,624	5,000	5,000
Chromium:					
Chromite, gross weight e/	157,203	150,285	79,445	57,000 r/	55,000
Marketable ore (41.6% Cr <sub>2</sub> O <sub>3</sub> )	84,423	81,994	64,597	117,000 r/	86,000 3/
Concentrate	21,881	20,195	6,837	3,400 r/	-- 3/
Total marketable ore and concentrate	106,304	102,189	71,434	120,400 r/	86,000 3/
Ferrochromium	31,144	30,252	28,120	12,500 r/	11,900 3/
Copper:					
Ore:					
Gross weight	24,895	53,477	33,945	-- r/	--
Concentrate	869	2,294	8,691	-- r/	--
Cu content e/	220	3,200	900	-- r/	--
Metal, primary:					
Smelter (blister)	--	1,632	1,281	-- r/	--
Refined, electrolytically	--	1,150	342	-- r/	--
Iron and steel :					
Pig iron e/	10,000	10,000	10,000	-- r/	--
Crude steel e/	20,533 r/	19,527 r/	15,600 r/	64,700 r/	94,100 3/
Rolled steel	43,000	42,000	8,700	-- r/	--
INDUSTRIAL MINERALS					
Cement, hydraulic thousand tons	100 r/	84 r/	106 r/	180 r/	--
Clay, kaolin e/	500	500	422 r/	420 r/	385 3/
Dolomite e/	50,000	50,000	50,000	50,000	50,000
Fertilizer, manufactured:					
Phosphatic	26,604	12,284	8,600	-- r/	--
Urea e/	3,000	3,000	3,000	--	--
Nitrogen, N content of ammonia e/	10,000	10,000	10,000	-- r/	--
Olivinite e/	300	300	300	200	200
Phosphate rock (12%-15% P <sub>2</sub> O <sub>5</sub> ) e/	1,000	1,000	1,000	-- r/	--
Pyrite, unroasted	--	--	--	--	--
Salt e/	10,000	10,000	10,000	--	--
Sodium compounds n.e.s., soda ash, calcined e/	100	--	--	--	--
Sulfuric acid e/	500	500	500	500	500
MINERAL FUELS AND RELATED MATERIALS					
Asphalt and bitumen, natural 4/ thousand tons	16,900	15,782	16,625	16,000 r/	15,000
Coal, lignite do.	38,900	49,000 r/	28,000 r/	20,600 r/	16,400 3/
Gas, natural, gross production 5/ thousand cubic meters	18,271	16,551	14,167	11,490 r/	10,980 3/
Petroleum:					
Coke	33,678	57,842	47,543	46,000 r/	45,000
Crude:					
Gross weight thousand tons	359,666	364,627	323,009	314,000 r/	308,000 3/
Converted e/ thousand 42-gallon barrels	2,400	2,000	2,400	2,100 r/	2,000
Refinery products	315,072	379,131	328,875	324,000	310,000

e/ Estimated. r/ Revised.

1/ Table includes data available through August 2002

2/ In addition to the commodities listed, a variety of industrial minerals and construction materials (common clay, quartz, titanomagnetite, stone, and sand and gravel) are produced, but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output levels.

3/ Reported figure.

4/ Includes asphalt and bitumen produced at petroleum refineries.

5/ Separate data on marketable production are not available, but gross and marketed output are regarded as being nearly equal.

TABLE 2  
ALBANIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2001 1/

(Thousand metric tons unless otherwise specified)

Commodity		Location of main facilities (all state-owned)	Annual capacity
Cement		Elbasan, 32 kilometers southeast of Tirana; Kruje, 20 kilometers northwest of Tirana; Shkoder, 85 kilometers northwest of Tirana; and Vlore, southwest of Tirana	1,200
Chromite		Bater (including Bater I and II and Martanesh), 40 kilometers northwest of Tirana	450
Do.		Bulquize (including Bulquize south, Fush, Ternove, and Todo Maco), 35 kilometers northwest of Tirana	450
Do.		Kalimash, 60 kilometers north of Tirana	250
Do.		Kam, 70 kilometers north of Tirana	100
Do.		Klos, 20 kilometers northeast of Tirana	50
Do.		Pogradec (including Katjtel, Memelisht, Pishkash and Pojske Prenjas), 50 kilometers east of Tirana	100
Ferrochromium		Burrel, 35 kilometers northeast of Tirana	40
Do.		Elbasan, 32 kilometers southeast of Tirana	36
Copper:			
Ore		Fushe-Arrez, 80 kilometers north of Tirana	350
Do.		Gjejan, 100 kilometers northeast of Tirana	150
Do.		Golaj (including Nikoliq and Pus), 120 kilometers northeast of Tirana	150
Do.		Kurbnesh-Perlat, 55 kilometers northeast of Tirana	100
Do.		Rehove, 110 kilometers southeast of Tirana	100
Do.		Reps (including Gurch, Lajo, Spac, and Thurr), 55 kilometers north of tirana	350
Do.		Rreshen, 50 kilometers north of Tirana	50
Do.		Shkoder (including Palaj, Karma I and II), 85 kilometers northwest of Tirana	100
Smelter		Kukes, 110 kilometers northeast of Tirana	6
Do.		Lac, 35 kilometers northwest of Tirana	7
Do.		Rubik, 50 kilometers north of Tirana	4
Iron ore		Prenjas (Bushtrica, Prenjas, Skorska I and II), 70 kilometers southeast of Tirana	650
Do.		Guri i Kuq (including Cervenake, Grasishta, Guri i Kuq, Hudenisht and Guri Pergjrgjur), 25 kilometers east of Tirana	500
Steel		"Steel of the Party" Metallurgical Combine at Elbasan	150
Nickel, smelter		Elbasan	6
Coal, lignite		Maneze, Mezes, and Valias Mines in Tirana Durres area; Krabe Mine, 20 kilometers southeast of Tirana; Alarup and Cervnake Mines, in Pogradec area, 80 kilometers southeast of Tirana; Mborje-Drenove Mine in Korce area, 85 kilometers southwest of Tirana; and Memaliaj Mine in Tepelene area, 110 kilometers south of Tirana	2,500
Natural gas	million cubic feet	Gasfields on southwest Albania between Ballsh and Fier	16,000
Petroleum:			
Crude	42-gallon barrels per day	Oilfields at Marineze, Ballsh, Shqisht, Patos, Kucova, Gorrisht, and others	35,000
Refined	do.	Ballsh, Cerrik, Fier, and Stalin Refineries	33,000

1/ A substantial portion of these enterprises have been operating significantly below capacity during the transition to a market economy; the capacities provided in this table only represent the latest available information and may not show the true status of these enterprises.



TABLE 3  
BOSNIA AND HERZEGOVINA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/ METALS	1997	1998	1999	2000	2001
Aluminum:					
Bauxite	75,000	75,000	75,000	75,000	75,000
Metal, ingot; primary and secondary	40,000	38,000	70,000	94,500	100,000
Iron and steel:					
Ore and concentrate:					
Ore, gross weight	100,000	100,000	100,000	100,000	100,000
Ore, Fe content	35,000	35,000	35,000	36,000	36,000
Metal:					
Ferroalloys:					
Ferrosilicon	1,000	10,000 r/	15,000 r/	20,000	20,000
Pig iron	60,000 r/	58,000 r/	45,000 r/	57,000 r/	60,000
Crude steel:	72,000 r/	75,000 r/	60,000 r/	77,000 r/	80,000
Electric arc furnace	14,000	19,000	20,000	24,000	25,000
Open hearth furnace	58,000	56,000	40,000	53,000	55,000
Semimanufactures	57,000 r/	67,000 r	75,000 r/	16,000 r/	60,000
Lead:					
Mineral concentrator output:					
Ore, gross weight (Pb-Zn ore)	10,000	10,000	10,000	10,000	10,000
Pb content of ores	200	200	200	200	200
Pb concentrate	400	400	400	400	400
Metal, smelter, primary and secondary	100	100	100	100	100
Manganese ore:					
Gross weight	2,000	2,000	2,000	2,000	2,000
Mn content	500	500	500	500	500
Zinc:					
Zinc content of Pb-Zn ore	300	300	300	300	300
Concentrate output, gross weight	600	600	600	600	600
INDUSTRIAL MINERALS					
Asbestos, all kinds	500	500	500	500	500
Barite concentrate	2,000	2,000	2,000	2,000	2,000
Cement thousand tons	200	300	300	300	300
Clays:					
Bentonite	800	800	800	800	800
Ceramic clay, crude	20,000	20,000	20,000	20,000	20,000
Kaolin:					
Crude	3,000	3,000	3,000	3,000	3,000
Calcined	1,500	1,500	1,500	1,500	1,500
Gypsum:					
Crude	30,000	30,000	30,000	30,000	30,000
Calcined	3,000	3,000	3,000	3,000	3,000
Lime thousand tons	50	50	50	50	50
Magnesite, crude	2,000	2,000	2,000	2,000	2,000
Nitrogen, N content of ammonia	500	500	500	500	500
Quartz, quartzite, glass sand: Glass sand	50,000	50,000	50,000	50,000	50,000
Salt, all sources	50,000	50,000	50,000	50,000	50,000
Sand and gravel, excluding glass sand thousand cubic meters	500	500	500	500	500
Sodium compounds:					
Soda ash	5,000	5,000	5,000	5,000	5,000
Caustic soda	5,000	5,000	5,000	5,000	5,000
Sodium bicarbonate	500	500	500	500	500
Stone, excluding quartz and quartzite, Dimension, crude:					
Ornamental square meters	20,000	20,000	20,000	20,000	20,000
Other cubic meters	2,000	2,000	2,000	2,000	2,000
Crushed and brown, n.e.s. thousand cubic meters	500	500	500	500	500
Sulfur, byproduct of metallurgy	1	1	1	1	1
MINERAL FUELS AND RELATED MATERIALS					
Brown coal and lignite thousand tons	1,810 r/ 3/	1,764 r/ 3/	1,800	1,900 r/	1,900
Coke	--	--	--	--	--
Petroleum refinery products thousand 42-gallon barrels	500	500	500	500	500

1/ Table includes data available through August 2001.

2/ In addition to commodities listed, common clay was also produced, but available information was inadequate to make reliable estimates of output.

TABLE 4  
BOSNIA AND HERZEGOVINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2001

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Aluminij d.d. Mostar	Plants at Birac-Zvornik	600
Do.	do.	Plant at Mostar	280
Aluminum	do.	Smelter at Mostar	92
Bauxite	do.	Mines at Vlasenica, Jajce, Bosanska Krupa, Posusje, Listica, Citluk, and other locations	2,000
Coal:			
Brown	SOUR Titovi Rudnici Uglja, Tuzla	Mines in BiH	12,000
Lignite	do.	do.	7,000
Cement	Gik Hidrogradnja, Tvornica Cementa	Plant at Kakanj	650
Ferroalloys	Elktrobosna, Elektrohemijska i Eletrotermijska Industrija	Plant at Jajce	80
Iron ore	Rudarsko Metalurski Kombinat Zenica (RMK Zenica)	Mines at Vares, Ljubija, and Radovan	5,000
Lead-zinc ore	Energoinvest	Mine and mill at Srebrenica	300
Manganese ore	Mangan-Energoinvest	Mine and concentrator at Buzim	100
Petroleum:			
Refined	thousand barrels per day	Energoinvest: Rafinerija Nafta Bosanski Brod	100
Pig iron		RMK Zenica	Four blast furnaces at Zenica;
Do.		do.	Two blast furnaces at Vares
Do.		do.	Electric reduction furnaces at Iljas
Salt	cubic meters per year	Hemijski Kombinat "Sodaso," Rudnik Soli i Solni Bunari	Rock salt mines at Tusanj
Do.	do.	do.	Production from brine at Tuzla
Steel, crude		BH Steel-Zeljezara (former RMK Zenica)	Plant at Zenica

TABLE 5  
CROATIA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/ METALS	1998	1999	2000	2001	2002
<b>Aluminum:</b>					
Bauxite e/	--	--	--	--	-- 4/
Metal, ingot, primary and secondary	16,112	14,461	15,050	16,019	-- 4/
Alloys	2,191	843	977	823	812 4/
Semimanufactures, rolled	26,148	29,465	30,161	34,106	33,774 4/
Ferrochromium	11,771	--	15,753	361	-- 4/
<b>Steel:</b>					
Crude, from electric furnaces	104,854	77,213	71,021	57,993	33,851 4/
Semimanufactures:					
Bars and wire rod	42,357	46,665	42,388	31,583	2,078 4/
Strip, narrow and wide		--	--	--	-- 4/
Seamless tubes	56,637	40,719	36,432	35,297	23,435 4/
Welded pipe	63,844	44,873	26,405	39,935	37,509 4/
<b>INDUSTRIAL MINERALS</b>					
Cement thousand tons	2,294	2,712	2,852	3,246	3,378 4/
<b>Clays:</b>					
Bentonite	7,581	8,441	10,013	10,580	11,204 4/
Ceramic clay e/	5,022	6,000	6,100	6,000	6,000
Fire clay, crude e/	3,500	3,000	--	--	--
<b>Gypsum:</b>					
Crude	107,800	137,991	150,765	130,861	145,000 4/
Calcined	1,259	1,236	1,176	1,217	1,200
Lime thousand tons	216	198	220	253	269 4/
Nitrogen, N content of ammonia do.	248	306	328	263	249 4/
Pumice and related materials, volcanic tuff do.	38	55	38	42	41 4/
Quartz, quartzite, glass sand	245,855	211,572	211,705 r/	252,013 r/	274,121 4/
Salt, all sources	24,087	18,477	33,668	32,585	36,885 4/
Sand and gravel, excluding glass sand thousand cubic meters	4,316	3,644	3,480	3,865 r/	4,353 4/
<b>Stone, excluding quartz and quartzite, dimension stone, crude:</b>					
Ornamental square meters	1,138,728	1,155,281	1,063,901 r/	1,044,944	1,127,948 4/
Crushed and brown, n.e.s. thousand tons	11,360	11,871	10,801	12,941	14,736 4/
Other e/ cubic meters	20,000	20,000	25,000	25,000	25,000
Sulfur, byproduct of petroleum e/	15,000	15,000	15,000	15,000	15,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Carbon black	22,165	17,589	20,029	21,180	20,000
Coal, bituminous thousand tons	51	15	--	--	-- 4/
Natural gas, gross production million cubic meters	1,570	1,551	1,659 r/	2,010	2,122 4/
<b>Petroleum, crude:</b>					
As reported thousand tons	1,389	1,293	1,214	1,121	1,108 4/
Refinery products	5,183,000	5,639,000	5,322,000	5,400,000	5,300,000

e/ Estimated. r/ Revised. -- Zero.

1/ Table includes data available through May 2003.

2/ Estimated data are rounded to three significant digits.

3/ In addition to commodities listed, common clay also was produced, but available information was inadequate to make reliable estimates of output levels.

4/ Reported figure.

TABLE 6  
CROATIA: STRUCTURE OF THE MINERALS INDUSTRY IN 2001

(Thousand metric tons unless otherwise specified)

Commodity			Major operating companies	Location of main facilities	Annual capacity	
Alumina			Jadral, Jadranski Aluminijum	Jadral Alumina Plant	150	
Aluminum			Boris Kidric Tvornica Laki Metal	Smelter at Sibenik	75	
Do.			Top-Tvornica Olovni i Aluminjskih	Semimanufactures producer at Savska	NA	
Bauxite			Jadral, Jadranski Aluminijum	Mines in at Obrovac, Drnis, and other locations	450	
Coal, bituminous			Istarski Ugljenokopi Rasa	Mines at Labin and Potpican	500	
Cement			Dalmacija Cement	Sv. Juraj plant at Kastel Sucurac	1,300	
Do.			do.	Sv. Kajo plant at Solin	750	
Do.			do.	Majdan plant at Solin Majdan	780	
Do.			Istra Cement International D.D.	Plant at Pula	70	
Do.			Tvornica Cementa Koromacno	Plant at Koromacno	420	
Do.			Tvornica Cementa Umag D.D.	Cement plant at Umag	480	
Do.			Nasicecement D.D.	Nacise plant at Tajnovac	840	
Natural gas	million cubic feet		do.	Main natural gasfields at Bogsic Lug, and Molve	70,000	
Petroleum:						
Crude	thousand barrels per day		Industrija Naft	d.d. Zagreb (INA)	Oilfields in Croatia and Slovenia: Benicanci, Zutica, Struzec, Ivanic Grad, Lendava, and other locations	70
Do.	do.		do.		Refineries at Urinj and Rijeka	160
Do.	do.		do.		Refinery at Sisak	150
Pig iron			Zeljezara Sisak d.d.		Two blast furnaces at Sisak	235
Salt	cubic meters		Solana Pag, Solana Ante Festin		Marine salt: Pag Island	13
Steel, crude			Zeljezara Sisak d.d.		Plant at Sisak	401
Do.			Jadranska Zelejazara Split		Plant at Split	120

NA Not available.

TABLE 7  
MACEDONIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1997	1998	1999	2000	2001
METALS					
Aluminum, metal, ingot, primary and secondary	4,000	5,850 4/	5,000	4,500	4,000
Cadmium, smelter output kilograms	50 4/	50	50	50	50
Chromite:					
Ore, gross weight	5,000	--	--	--	-- 4/
Concentrate (produced largely from imported ores)	3,000	--	--	--	-- 4/
Copper, mine and concentrator output:					
Ore:					
Gross weight thousand tons	2,000	2,000	2,000	2,000	1,500
Cu content	8,000 4/	9,100 4/	10,200 r/	10,000	7,000
Concentrate:					
Gross weight	20,000	20,000	20,000	5,000	20,000
Cu content	13,000	9,100	9,000	6,000	9,000
Gold kilograms	650	700	750 r/	750	500
Iron and steel:					
Iron ore:					
Gross weight	20,000	20,000	20,000	20,000	20,000
Fe content of ore	1,000	1,000	1,000	1,000	1,000
Concentrate	15,000	15,000	15,000	15,000	10,000
Pellets	10,000	10,000	10,000	10,000	10,000
Agglomerate	5,000	5,000	5,000	5,000	5,000
Metal:					
Ferroalloys:					
Ferrochromium, low C	460 4/	-- 4/	-- 4/	--	--
Ferronickel (38% Ni), gross weight	7,900	9,500 r/	5,000 4/	--	--
Ferrosilicon	55,000	96,700 r/	73,000	65,000	60,000
Silicon	1,000	1,000	--	--	--
Total	64,400	107,200 r/ 4/	78,000	65,000	60,000

See footnotes at end of table.

TABLE 7--Continued  
MACEDONIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/ METALS--Continued	1997	1998	1999	2000	2001
Iron and steel--Continued:					
Metal--Continued:					
Steel, crude	30,000	-- r/	-- 4/	--	
Semimanufactures	60,000	65,000 r/	60,000	60,000	55,000
Lead:					
Mine output:					
Ore gross weight (Pb-Zn ore)	850,000	867,182 r/ 4/	670,000	850,000	600,000
Pb content	28,000	26,000	26,000 4/	26,000	11,000
Concentrate, Pb content	17,000	14,328 r/ 4/	12,300 r/ 4/	16,500	9,000
Primary and secondary:					
Smelter	20,000	20,000	20,000	20,000	8,000
Refined	26,046 r/ 4/	28,415 r/ 4/	19,738 r/ 4/	22,900	7,000
Nickel, metal, Ni content of FeNi	5,300 r/	5,800 r/	1,900 4/	--	--
Silver kilograms	18,760 r/ 4/	20,000	22,000 r/	20,000	15,000
Zinc:					
Concentrate	15,800 r/	14,328 r/ 4/	8,000	12,200	5,000
Metal:					
Refined, primary and secondary:					
Smelter	7,000	7,000	7,000	7,000	7,000
Electrolytic	53,000	57,162 r/ 4/	49,608 r/ 4/	62,800	16,000
INDUSTRIAL MINERALS					
Cement thousand tons	500 4/	461 r/ 4/	520 4/	585	450
Clays, bentonite	30,000	30,000	30,000	30,000	25,000
Diatomite	5,000	5,000	5,000	5,000	5,000
Feldspar	--	8,137 r/ 4/	11,000	10,000	8,000
Gypsum:					
Crude	25,000	25,000	25,000	25,000	20,000
Calcined	5,000	5,000	5,000	5,000	3,000
Lime	10,000 r/	924 r/	-- 4/	1,000	500
Pumice and related materials, volcanic tuff	100,000	100,000	150,000	150,000	50,000
Sand and gravel, excluding glass sand thousand cubic meters	130	130	150	150	100
Stone, excluding quartz and quartzite, dimension, crude:					
Ornamental square meters	190,000	190,000	200,000	200,000	150,000
Crushed and brown, n.e.s. thousand cubic meters	400	400	400	400	300
Other cubic meters	10,000	10,000	10,000	10,000	5,000
Sulfur, byproduct of metallurgy thousand tons	20,000	20,000	29,000	26,000	20,000
Talc:					
Crude	10,000	10,000	9,000	10,000	7,000
Washed	7,000	7,000	7,000	7,000	5,000
MINERAL FUELS AND RELATED MATERIALS					
Lignite thousand tons	7,165 r/ 4/	8,180 r/	7,500	7,100	6,000
Petroleum refinery products thousand 42-gallon barrels	6,000 r/	6,000	6,000	6,000	6,000

r/ Revised. -- Zero.

1/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.

2/ Table includes data available through July 2002.

3/ In addition to commodities listed, common clay also is produced, but available information was inadequate to make reliable estimates of output levels.

4/ Reported figure.

TABLE 8  
MACEDONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2001

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity e/
Cement	Azbestcements "Usje" Preduzece za Proizvodnju Cementa	Plant at Skopje	2,190
Chromite, concentrate	Jugohrom, Hemijsko-Elektrometalurski Kombinat (HEK)	Concentrator at Radusa	150
Copper ore	Bucim, Rabotna Organizacija za Rudarstvo i Metalurgija za Baker	Mine and mill at Bucim, near Radovis	7,000
Ferroalloys	Jugohrom, Hemijsko-Elektrometalurski Kombinat (HEK)-Jegunovce	Plant at Jegunovce	80
Iron ore	Skopje, Rudnici i Zeljezarnica Skopje	Mines at Tajmiste, Demir Hisar, and Damjan	1,000
Lead and zinc, ore	Prepobotuvacki, Kombinat Zletovo-Sasa: Sase, Rudnici za Olovo i Cink	Mine and mill near Kamenica	300
Do.	Zletovo, Rudnici za Olovo i Cink	Mine and mill near Probistip	700
Lead, metal	Zletovo, Topilnica za Cink i Olovo	Imperial smelter at Titov Veles	40
Do.	do.	Refinery at Titov Veles	40
Nickel: 1/ Ore	Feni-Rudnici i Industrija za Nikel, Celik i Antimon	Mine and opencast mine near Kavadarci	2,300
Metal	do.	Ferronickel plant at Kavadarci	161
Pig iron	Skopje, Rudnici i Zeljezarnica Skopje	Five Elkem electric furnaces at Skopje	430
Steel, crude	do.	Plant at Skopje	980
Zinc, metal	Zletovo, Topilnica za Cink i Olovo	Imperial Smelter plant and refinery at Titov Veles	65

e/ Estimated.

1/ Nickel in ferronickel.

TABLE 9  
SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/ METALS	1997	1998	1999	2000	2001
Aluminum:					
Alumina, calcined, gross weight	160,000	152,619	156,012	186,135 r/	200,660
Bauxite, gross weight	470,000	226,000	500,000	630,000	610,000
Metal, ingot, primary and secondary	65,743	60,090	72,505	88,151	100,176
Antimony, metal	--	--	--	--	--
Bismuth, metal kilograms	20 e/	430	--	--	--
Cadmium do.	80,000 e/	17,320	--	--	--
Copper:					
Mine and concentrator output:					
Ore:					
Gross weight thousand tons	20,507	19,939	15,975	12,896	7,123
Cu content	82,500	84,627	62,777	52,000 e/	28,000 e/
Concentrate:					
Gross weight	361,000	372,103	272,172	200,000 e/	120,000 e/
Cu content	73,600	70,900 e/	51,700	41,000 e/	22,000 e/
Metal:					
Blister and anodes:					
Primary	59,000 e/	101,000	54,000	45,000 e/	34,000 e/
Remelted	60,000 e/	101,925	49,782	45,000 e/	35,000 e/
Total	119,000 e/	202,925	103,782	90,000	69,000
Refined:					
Primary	70,534	54,000	49,902 r/	45,632	32,365
Remelted	43,000	40,396	1,902	40,000 e/	30,000 e/
Total	113,534	94,396	51,804	95,632 e/	62,365 e/
Gold, refined kilograms	4,000	2,684	1,260	1,121 r/	800 e/
Iron and steel:					
Ore and concentrate, agglomerate	25,000	5,125	2,088	-- r/	--
Metal:					
Ferroalloys, ferronickel	6,500 e/	1,215	--	--	--
Pig iron	907,000	825,916	134,882	563,000	461,000
Crude steel	979,000	948,314	226,240	682,000	598,000
Semimanufactures	1,460,000	1,740,000	334,000 r/	880,000 r/	801,000
Lead:					
Mine and concentrate output:					
Ore, gross weight (Pb-Zn ore)	1,049,000	1,248,852	884,000 r/	1,302,000 r/	926,000
Pb content of ore e/	27,000	24,750 4/	18,000	26,000	19,000
Concentrate, gross weight e/	31,000	32,691 4/	26,000	38,000	27,000
Pb content of concentrate e/	11,000	12,000	9,000	14,000	10,000
Metal, primary and secondary:					
Smelter	41,000	35,576	-- r/	1,500 r/	--
Refined	23,632	23,756	--	1,242	--
Magnesium, metal	2,500 e/	3,965	1,203	2,600 e/	1,700 e/
Nickel, metal, Ni content of ferronickel	2,440	466	--	--	--
Platinum-group metals:					
Palladium kilograms	55 e/	54	21	21 e/	10
Platinum do.	3 e/	3	3	3 e/	1
Selenium do.	38,000 e/	40,866	20,080	20,000 e/	20,000
Silver do.	42,640	34,474	7,643	9,068 r/	5,745
Zinc:					
Zn content of Pb-Zn ore	25,000 e/	20,285	19,000 r/ e/	29,000 e/	20,000 e/
Concentrator output, gross weight	35,000 e/	40,530	34,000 e/	50,000 e/	35,000 e/
Zn content of concentrate	13,000	14,000	20,000 e/	30,000 e/	20,000 e/
Refined	29,454	14,415	683	8,291	13,467
INDUSTRIAL MINERALS					
Asbestos fiber, all grades	765	1,452	361	563	194
Cement thousand tons	2,011	2,253	1,575	2,117	2,418
Clays:					
Bentonite	100 e/	68	77	75 e/	75 e/
Ceramic clay	35,000 e/	40,033	29,420	30,000 e/	30,000 e/
Fire clay:					
Crude	51,000	45,319	25,766	30,000 e/	30,000 e/
Calcined e/	10,000	10,000	4,000	10,000 e/	10,000 e/

See footnotes at end of table.

TABLE 9--Continued  
SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1997	1998	1999	2000	2001
<b>INDUSTRIAL MINERALS--Continued</b>					
Clays--Continued:					
Kaolin, crude	60,000 e/	75,092	40,321	39,475 r/	40,000 e/
Feldspar, crude	4,880	4,280	3,453	4,254 r/	4,000 e/
Gypsum, crude	32,124	27,778	33,962	46,651 r/	45,000 e/
Lime thousand tons	460	480	381	499 r/	467
Magnesite:					
Crude do.	98	949	31	41	36
Caustic calcined	6,327	7,044	2,000	3,000 e/	2,500 e/
Mica, all grades	200 e/	247	229	230 e/	230 e/
Nitrogen, N content of ammonia	235,000	166,152	75,788	60,000 e/	65,900
Pumice and related volcanic materials, volcanic tuff	120,000 e/	120,000	50,000	120,000 e/	100,000 e/
Quartz sand thousand tons	366	353	253	418	301
Salt, all sources	28,000	78,148	63,834	78,277	61,646
Sand and gravel excluding glass sand thousand cubic meters	2,351	3,060	2,006	2,675 r/	1,967
Sodium compounds:					
Caustic soda	64,713	63,344	13,720	7,415	7,984
Sodium sulfate	5,000	1,896	1,321	800 e/	800
Stone, excluding quartz and quartzite, dimension, crude:					
Ornamental square meters	206,000	258,000	157,000 r/	158,000 r/	84,000
Crushed and broken, n.e.s. thousand cubic meters	2,665	3,085	1,937	3,000 e/	3,000 e/
Other, stone blocks cubic meters	9,817	1,630	786	1,000 e/	1,000 e/
Sulfur, byproduct: e/					
Metallurgy thousand tons	100	100	100	100 e/	100
Petroleum do.	1	1	1	1 e/	1
Total do.	101	101	101	101	101
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal:					
Bituminous thousand tons	92	105	49	88	70
Brown do.	512	390	413	398	376
Lignite do.	42,313	43,577	30,967	33,638	31,789
Total do.	42,917	44,072	31,429	34,124	32,235
Natural gas, gross production million cubic meters	688	731	143 r/	160 r/	111
Petroleum:					
Crude, as reported thousand tons	979	913	705	805	746
Refinery products do.	3,167 r/	2,549 r/	1,047 r	1,100 e/	2,000 e/

e/ Estimated. r/ Revised. -- Zero.

1/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.

2/ Table includes data available through June 2000.

3/ In addition to commodities listed, common clay and diatomite also are produced, and tellurium may be recovered as a copper refinery byproduct, but available information is inadequate to make reliable estimates of output levels.

4/ Reported figure.



TABLE 10  
SERBIA AND MONTENEGRO: STRUCTURE OF THE MINERAL INDUSTRY IN 2001

(Thousand of metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Kombinat Aluminijuma Titograd	Plant at Titograd, Montenegro	200.
Aluminum	do.	Smelter at Titograd, Montenegro	100.
Antimony, ores and concentrates	Zajaca, Rudarsko Tapioncarski Bazen	Mines and mills near Zajaca, Serbia	80.
Do.	do.	Mines and mill at Rajiceva Gora, Serbia	300.
Antimony, metal	do.	Smelter at Zajaca, Serbia	4.
Bauxite	Rudnici Boksita, Niksic	Mines in Montenegro at Kutsko Brdo, Zagrad, Biocki Stan, Durakov Dol, and other locations	650.
Coal:			
Bituminous	Ibarski Rudnici Kamenog Uglja	Mines at Jarando and Usce, near Baljevac na Ibru, Serbia	250.
Lignite	SOUR Kolubara, Rudarsko Energetsko Industrijski Kombinat, RO	Opencast mines: Polje B and Polje D	10,000.
Do.	Kolubara Povrsinski Kopovi	Tamnavski Kopovi (also known as Kolubarski Rudnici Lignita) near Vreoci, Serbia	14,000.
Do.	SOUR Elektroprivreda Kosova, RO Kosovo, Proizvodnja Separacija i Transport Uglja	Opencast mines: Dobro Selo and Belacevac near Obilic, Serbia	2,000.
Cement	Becinska Fabrika Cementa	Plant at Beocin, Serbia	2,031.
Do.	Fabrika Cementa Novi Popovac	Plant at Popovac, Serbia	1,613.
Copper	Rudarsko Topionicki Bazen Bor	Smelter at Bor, Serbia	180.
Do.	do.	Electrolytic refinery at Bor, Serbia	180.
Do.	do.	Mine and mill at Bor, Serbia	5,000 ore.
Do.	do.	Mine and mill at Majdanpek, Serbia	15,000 ore.
Do.	do.	Mine and mill at Veliki Krivelj, Serbia	8,000 ore.
Lead-zinc ore	Rudarsko-Metalursko-Hemijski Kombinat za Olovo i Cink Trepca	Mines at Ajvalija, Kopanaonik, Badovac; Trepca, Blagodat, Lece; Veliki Majdan, Tisovak; and Kisnica, Rudnik, Suplja Stijena	5,000.
Do.	do.	Mills at Kriva Feja, Lece, Rudnik, Badovac, Leposavic, Zvecan, and Maravce, Suplja Stijena	3,160.
Do.	Hemijska Industrija Zorka: Brskovo, Rudnici Olova i Cinka	Mine at Brskovo, Montenegro	500.
Do.	Veliki Majdan Rudnik Olova i Cinka	Mine at mill near Krupanj, Serbia	250.
Lead, metal	Rudarsko Metalursko Hemijski Kombinat za Olovo i Cink Trepca	Smelter at Zvecan, Serbia	180.
Do.	do.	Refinery at Zvecan, Serbia	90.
Magnesite, concentrate	Rudnici Magnezita "Sumadija"	Mine and plant at Sumadija, 20 kilometers northwest of Cacak, Serbia	120.
Do.	Rudnik i Industrija Magnezita "Strezovce"	Open cast mine at Beli Kamen, Strezovce, near Itiova Metrovica, Serbia	300.
Do.	do.	Sinter plant at Strezovce	40.
Do.	Magnohrom, Rudnik Magnezita "Magnezit"	Mine at Bela Stena, Baljevac na Ibru, Serbia	30.
Natural gas	million cubic feet	Naftaplin (Naftagas), RO za Istrazivanje, i Proizvodnju Nafte i Gasa	Natural gasfields in Serbia Kinkinda and others
Petroleum:			
Crude	thousand 42-gallon barrels per day	Naftagas, Naftna Industrija	Oil fields in Serbia: Kikinda and others
Refined			
Do.	do.	Naftagas, Naftna Industrija: Rafinerija Nafte Pancevo	Refinery at Pancevo, Serbia
Do.	do.	Naftagas, Naftna Industrija: Rafinerija Nafte Novi Sad	Refinery at Novi Sad, Serbia
Pig iron		Metalurski Kombinat, Smederevo	Blast furnace at Smederevo, Serbia
Steel, crude		do.	Plant at Smederevo, Serbia
Zinc metal		Rudarsko Metalursko Hemijski Kombinat Olova i Cinka Trepca, Metalurgija Cinka	Electrolytic plant at Titova Metrovica, Serbia
Do.		Hemijska Industrija Zorka	Electrolytic plant at Sabac, Serbia

TABLE 11  
SLOVENIA: APPARENT PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1997	1998	1999	2000	2001
<b>METALS</b>					
Aluminum, ingot, primary and secondary	74,400	73,803	77,200	83,800 r/	76,632 3/
Iron and steel, metal:					
Ferroalloys:					
Ferrochromium	9,232	10,621	560	--	--
Ferrosilicocalcium	200	200	200	200	100
Ferrosilicon	10,000	10,000	8,000	9,000	9,000
Crude steel from electric furnaces	372,700 r/	405,210	405,000	519,000 r/	500,000
Semimanufactures	380,000 r/	397,000 r/	418,000 r/	466,000 r/	450,000
Lead:					
Smelter, secondary e/	7,000	7,000	5,800	6,000	5,000
Refined, secondary	15,000	14,000	14,100 r/	15,300 r/	15,400 3/
Pb semimanufactures, rolled	300	300	300	300	300
<b>INDUSTRIAL MINERALS</b>					
Cement thousand tons	1,113	1,149	1,224 r/	1,300	1,300
Clays:					
Ceramic clay, crude	2,500	2,500	2,500	2,500	2,500
Kaolin:					
Crude	10,000	10,000	10,000	10,000	10,000
Lime thousand tons	140	150	150	150	150
Pumice and related materials, volcanic tuff e/	40,000	40,000	40,000	40,000	40,000
Quartz, quartzite, glass sand:	210,000	210,000	210,000	210,000	200,000
Salt, all sources	5,000	5,000	5,000	5,000	2,000
Sand and gravel, excluding glass sand thousand tons	10,412 r/	10,292 r/	12,419 r/	12,526 r/	12,500
Stone, excluding quartz and quartzite, crude: e/					
Dimension	82,000	91,000	104,000	78,000 r/	80,000
Other cubic meters	3,000	3,000	3,000	3,000	3,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal:					
Brown coal thousand tons	812	827	758	737 r/	685 3/
Lignite do.	4,163	4,100	3,804	3,743 r/	3,448 3/
Natural gas thousand cubic meters	12,100	12,500	5,700 r/	6,800 r/	6,100 3/
Petroleum, crude	1,100	900	800 r/	600 r/	700 3/

e/ Estimated. r/ Revised.

1/ Table includes data available through May 2001.

2/ In addition to commodities listed, common clay, coke, and petroleum products also were produced, but available information is inadequate to make reliable estimates of output levels.

3/ Reported figure.

TABLE 12  
SLOVENIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2001

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Talum d.o.o.	Plant at Kidricevo	120
Aluminum	do.	Smelter at Kidricevo	72
Coal:			
Brown	SOZC, Rudarsko Energetski Kombinat E. Kardelj, Trobovlje, Slovenia	Mines: Sasavski Rudnici at Trbovlje, Hrastnik, Ojstro, Senovo, and Kanizarnica	1,300
Lignite	Rudarsko Energetski Kombinat Velenje, RO Rudnik Lignita-Velenje	Mine at Velenje	5,000
Cement	Salonit Anhovo	Plant at Anhovo	1,120
Lead metal	Rudnik Svinca in Topilnica, Mezica	Smelter at Mezica	35
Do.	do.	Refinery at Mezica	30
Petroleum, refined thousand 42-gallon barrels per day	Industrija Naft (INA) Refinerija Naft Lendava	Refinery at Lendava	16
Pig iron	Združeno Podjetje Slovenske Železarne	Two blast furnaces at Zelazara Jesenice	300
Do.	Zelezara Store	Electric reduction furnaces at Store pri Celju	290
Steel, crude	Združeno Podjetje Slovenske Železarne	Plant at Jesenica	500
Do.	do.	Plant at Ravne	162
Do.	do.	Plant at Store	140